



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

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D5610-1TRN
Job Sheet 191956



Part No: D5610-1TRN

Job Qty: 1 pcs

Part Name: EC130 Aft Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 3/13/19

Job Tracking No:

Due Date: 4/12/19

Created By: Linda Lacelle

Type: Stock

Description:

Note: D5610 REV.B IPP REV:A 18.07.04 NEW ISSUE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Mori Seiki TL-40 - 1	1 pcs		4/12/19	4.40	2.38	Mori Seiki TL-40 - 1		
110	QC 2	1 pcs		4/12/19	0.00	0.00	QC 2 - 66		
120	Mori Seiki TL-40 - 1 - B4B	1 pcs		4/12/19	0.00	2.38	Mori Seiki TL-40 - 1 - B4B		
130	QC 2	1 pcs		4/12/19	0.00	0.00	QC 2 - 66		
140	QC 8	1 pcs		4/12/19	0.00	0.00	QC8		
145	Crosstubes - 4 - B4B	1 pcs		4/12/19	0.00	0.68	Crosstubes-1		
150	Crosstubes - 5 - B4B	1 pcs		4/12/19	0.00	1.00	Crosstubes-3		
160	QC 7	1 pcs		4/12/19	0.00	0.00	QC7-1		
170	Packaging 3-1 - Stock - B4B	1 pcs		4/12/19	0.00	0.00	Packaging3-1		
180	QC 21 - SA	1 pcs		4/12/19	0.00	0.00	QC21		

Part Op 100 - 1- Fill tube with sand & install plugs 2- Face and chamfer both ends as per Folio FC197 3- Turn first taper section on both side

120 - 1- Turn second taper on both side 2- Scribe part # and batch # using vibrating stylus on INSIDE the cuff as per Dwg D5610-TRN

145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - 1- handfinish X-TUBE INSIDE AND OUT

160 - ***IDENTIFY SERIAL/ P/N # BY USING A MARKER IN THE MIDDLE OF TUBE AT CONTAINER CREATION***

INSPECT ALODINE AND MAKE SURE TUBE IS IDENTIFY WITH MARKER IN THE MIDDLE OF THE TUBE

170 - ***IDENTIFY SERIAL # BY USING A MARKER IN THE MIDDLE OF TUBE AT CONTAINER CREATION***

INSPECT ALODINE AND MAKE SURE TUBE IS IDENTIFY WITH MARKER IN THE MIDDLE OF THE TUBE

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6030-140	Tube, Seamless	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	5078768

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6030-140	1	1	0

P.T.O.

DAS
66
9-89

Part Specifications

Specifications could not be found.

Plex 3/29/19 3:27 PM Dart.Hadley.Shannon



Container No: S167964



Part: D5610-1TRN

Job No: 191956

Serial No/Batch: S167964

Revision: B

Inspector:

Exp Date:

Instructions: Various STC's

Dart Aerospace Ltd.
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Date: 03/30/19



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D5610-1TRN
Job Sheet 191956



Part No: D5610-1TRN

Job Qty: 1 ea

Part Name: EC130 Aft Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

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Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		4/12/19	0.00	0.00	Start Up Crosstubes-1		
100	Mori Seiki	1 pcs		4/12/19	4.40	2.38	Mori Seiki TL-40		
110	QC	1 pcs		4/12/19	0.00	0.00	QC2-1		
120	Mori Seiki	1 pcs		4/12/19	0.00	2.38	Mori Seiki TL-40		
130	QC	1 pcs		4/12/19	0.00	0.00	QC2-1		
140	QC	1 pcs		4/12/19	0.00	0.00	QC8		
145	Crosstubes	1 pcs		4/12/19	0.00	0.68	Crosstubes-1		
150	HandFXtube	1 pcs		4/12/19	0.00	1.00	Crosstubes-3		
160	QC	1 pcs		4/12/19	0.00	0.00	QC7-1		
170	Packaging	1 pcs		4/12/19	0.00	0.00	Packaging3-1		
180	QC21-SA	1 Ea		4/12/19	0.00	0.00	QC21		

Part Op 100 - 1- Fill tube with sand & install plugs 2- Face and chamfer both ends as per Folio FC197 3- Turn first taper section on Descriptions: both side

120 - 1- Turn second taper on both side 2- Scribe part # and batch # using vibrating stylus on the cuff as per Dwg D5610-TRN

145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - 1- handfinish X-TUBE INSIDE AND OUT

170 - LOCATION : LG014

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6030-140	Tube, Seamless	1 pcs (1 ea)	90-Start up Operation	S078768

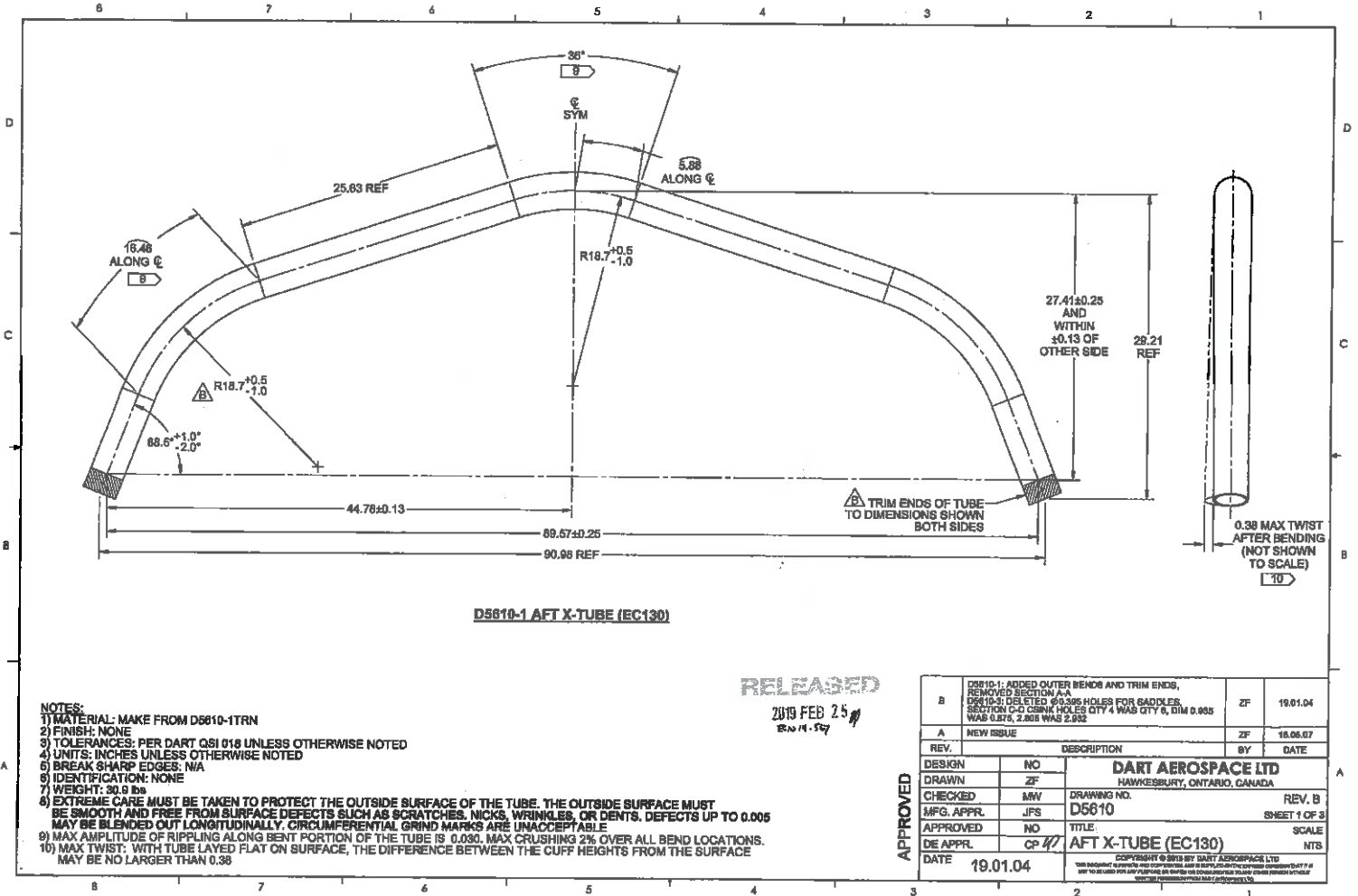
Job Allocations

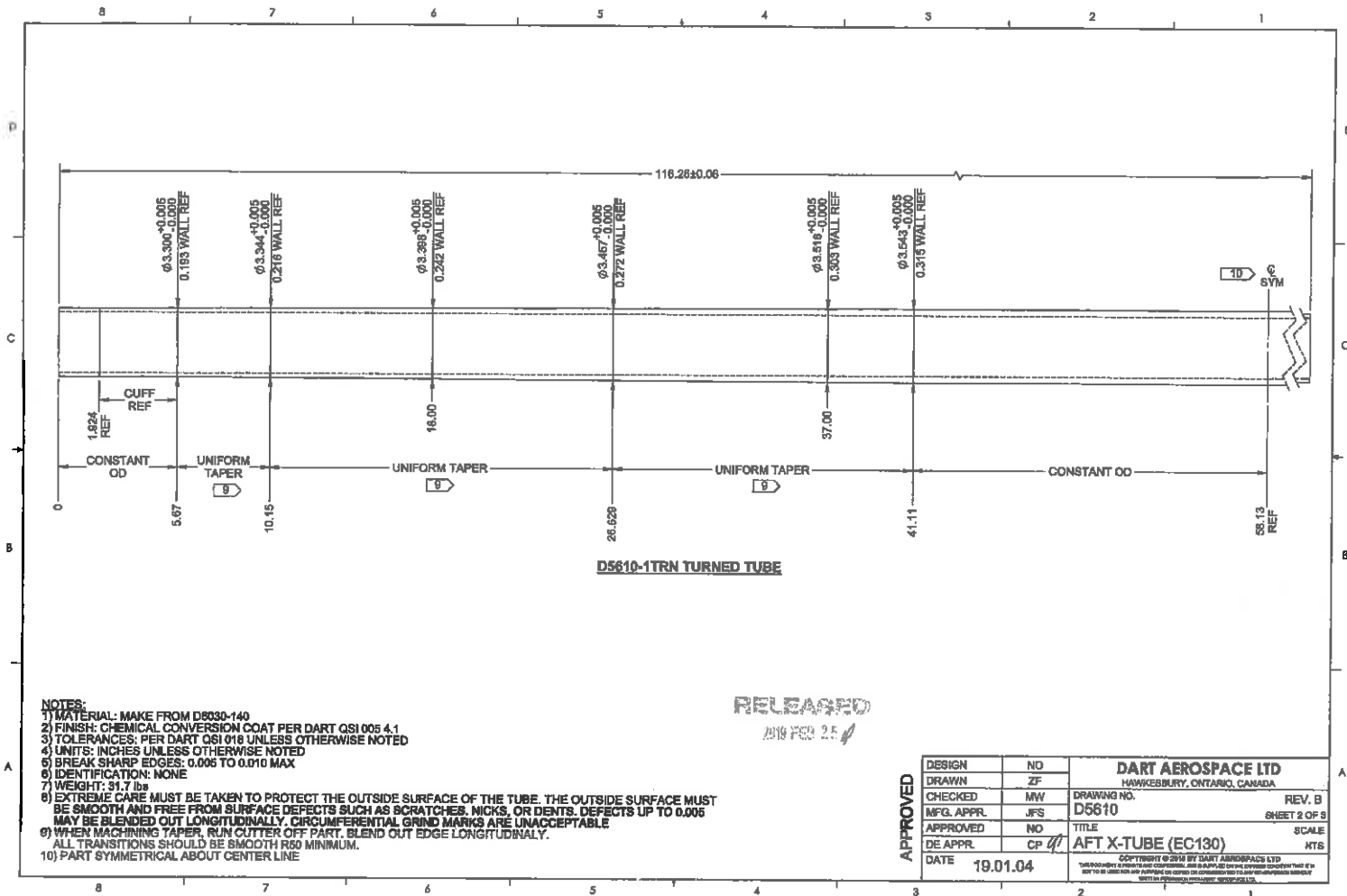
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6030-140	1	5	0

Part Specifications

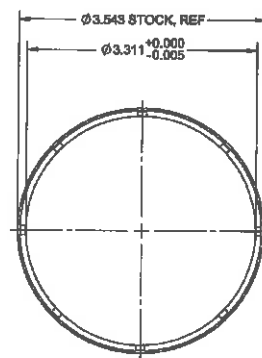
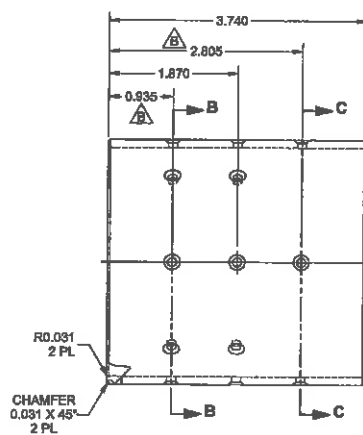
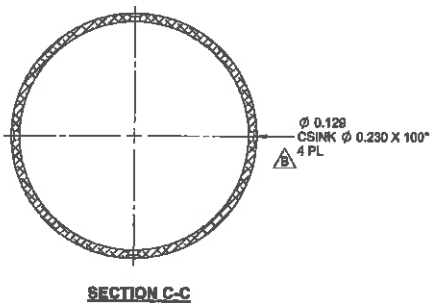
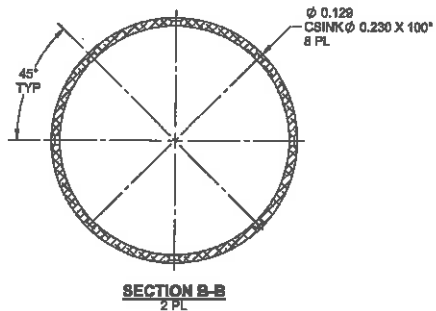
Specifications could not be found.

191956





DESIGN	NO	DART AEROSPACE LTD	
DRAWN	ZF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MW	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5610	SHEET 2 OF 9
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	AFT X-TUBE (EC130)	MTS
DATE	19.01.04	COPYRIGHT © 2019 BY DART AEROSPACE LTD	



D5610-3 CUFF

- NOTES:**
- 1) MATERIAL: MAKE FROM D8030-140
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.47 lbs

RELEASED
2010 FEB 25

DESIGN	NO	DART AEROSPACE LTD	
DRAWN	ZF	KAWNEERBURY, ONTARIO, CANADA	
CHECKED	MW	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5610	SHEET 3 OF 3
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	AFT X-TUBE (EC130)	NTS
DATE	19.01.04	CONFIDENTIAL © 2004 BY DART AEROSPACE LTD THE RECIPIENT OF THIS DOCUMENT AND ITS CONTENTS, AND ITS REPRODUCTION OR TRANSMISSION IN ANY FORM OR BY ANY MEANS, IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

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DART AEROSPACE LTD		Work Order: 191956
Description: Crosstube Assembly		Part Number: 05610-1TRN
Inspection Dwg: B	Rev: B	Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

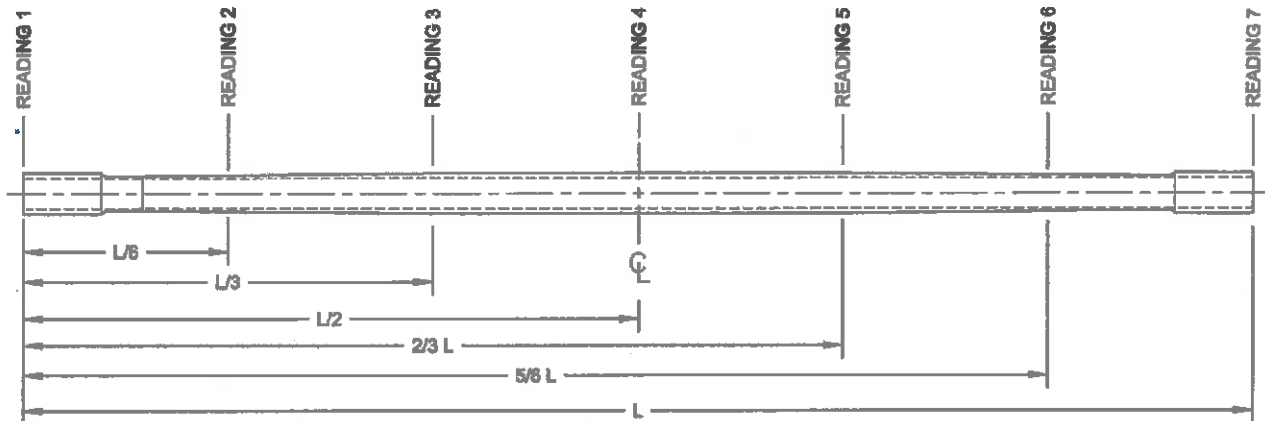
Inspection Sheet Drawing Dimension		Method of Inspection	Comments
SIDE A	3.300	CNC-05 ↓	Stack, ref
	3.344		
	3.398		
	3.457		
	3.518		
	3.543		
	3.543		
	3.543		
SIDE B	3.300	CNC-05 ↓	Stack, ref
	3.344		
	3.398		
	3.457		
	3.518		
	3.543		
	3.543		
	116.26		

Acceptable 11/19/4/1

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DART AEROSPACE LTD		Work Order:	191956
Description: Crosstube Assembly		Part Number:	DS610-1TRN
Inspection Dwg: B	Rev: B	Page 2 of 2	

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.194	.196	.198	.196	.004	± 0.030
READING 2 L= 19.38	.251	.252	.252	.252	.001	
READING 3 L= 38.75	.313	.318	.312	.312	.006	
READING 4 L= 58.13	.314	.314	.324	.320	.010	
READING 5 L= 77.51	.313	.315	.317	.309	.008	
READING 6 L= 96.88	.249	.254	.254	.247	.007	
READING 7 L= 116.26	.187	.191	.203	.198	.016	

Calibration Result

Actual Block Thickness: 100-400

Sitescan 250 Measured Thickness: 100-400

Measured by: DAS 66	Audited by: DAS 67	Preliminary Approval:
Date: 2019/03/30	Date: 19-04-01	Date:

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	
C	12.06.01	Wall thickness form added	KJ	

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. <u>D5610-1 TRV</u>		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐		DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Machining ☐ Small Fab ☐ Large Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐	
Date: _____		Sequence #: _____		QTY Affected: _____	
Description Work Order Deviation Corrosion pitting and scratches		Disposition Grind to remove pitting. Measure wall thickness and diameters after grinding and polish. See engineering for further disposition			
MRB (QS1042) <i>1/0 19.05.14</i>		Completed By _____			
Lead hand / Supervisor _____		QC / QA Coordinator <i>DAS 68 9-89</i>			
Date: _____		Date: <i>11/11/2019</i>			

Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY <table border="0"> <tr> <td>Pressure/Forced</td> <td>Contamination</td> <td>Power Loss/Surge</td> <td>Positioned Wrong</td> </tr> <tr> <td>Bending</td> <td>Misaligned/off center</td> <td>Folio/Program</td> <td>Outside Tolerance</td> </tr> <tr> <td>Crushing</td> <td>BOM/Route</td> <td>Grain Direction</td> <td>Drawing</td> </tr> <tr> <td>Cracks</td> <td>Broken/Damage/Defect</td> <td>Weld</td> <td>Finish</td> </tr> <tr> <td>Crimp/Kink/Ripple/Wave/Twist</td> <td>Incomplete/Unclear Instructions</td> <td>Wrong Stock Pulled</td> <td>Part Lost/Missing</td> </tr> <tr> <td>Marks/Chatter</td> <td>Drill Holes</td> <td>Out of Sequence</td> <td>Misread</td> </tr> <tr> <td>Mislabeled</td> <td>Fit/Function</td> <td>Off-set/Set-up</td> <td></td> </tr> </table>								Pressure/Forced	Contamination	Power Loss/Surge	Positioned Wrong	Bending	Misaligned/off center	Folio/Program	Outside Tolerance	Crushing	BOM/Route	Grain Direction	Drawing	Cracks	Broken/Damage/Defect	Weld	Finish	Crimp/Kink/Ripple/Wave/Twist	Incomplete/Unclear Instructions	Wrong Stock Pulled	Part Lost/Missing	Marks/Chatter	Drill Holes	Out of Sequence	Misread	Mislabeled	Fit/Function	Off-set/Set-up	
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Mislabeled	Fit/Function	Off-set/Set-up																																			
		Other/Details: _____																																			

Entered: _____

Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE



NCR No. _____

Route update only

Job: <u>19195C</u>		DEPARTMENT/PROCESS		Engineering	
Part No. <u>DS610-1TRN</u>		Cross tube		Water Jet	
		Small Fab		Supplier	
		Finishing		Quality	
DISPOSITION		Skid-tube		Eng. (Non-AW)	
Rework		Machining		Prod. Eng. Coord.	
Scrap		Large Fab		Rec/Store/Packaging	
Use-as-is					
Sequence #: _____		QTY Affected: _____		MRB (QS1042)	
Description Work Order Deviation		Disposition			
Corrosion pitting exceeds allowances		Scrap			
Completed By		Lead hand / Supervisor			
QC / QA Coordinator		QC / QA Coordinator			
68		68			
9-89		9-89			
JUL 31 2019		JUL 31 2019			
Root Cause		FAULT CATEGORY			
Operator		Positioned Wrong			
Manufacturing Process		Outside Tolerance			
Equip/Tooling		Drawing			
Handling/Preservation		Finish			
Material		Part Lost/Missing			
Product Improvement		Misread			
Process Improvement		Power Loss/Surge			
Human Factors		Folio/Program			
		Grain Direction			
		Weld			
		Wrong Stock Pulled			
		Out of Sequence			
		Off-set/Set-up			
		Other/Details:			